MARYLAND FISHERIES

PUBLISHED BY CONSERVATION DEPARTMENT OF MARYLAND

No. 27 BALTIMORE, MARYLAND March, 1934

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VIRGINIA LAW INCREASES OYSTER MUDDLE

VIRGINIA'S NEW LEGISLATION to open the Potomac River to hand-scraping has complicated rather than alleviated the oyster situation in those waters is the opinion of Conservation Commissioner Earle. Mr. Earle visited Richmond on February 22 and testified before the House Committee on Chesapeake Bay and tributaries, which later confirmed the Senate's measure to allow hand-scraping in the Potomac by the oystermen of Maryland and Virginia. The measure permits hand-scraping by boats of 40 feet of length or less, using scrapes weighing not more than 40 pounds, nor more than 36 inches in width.

Commissioner Earle stated that this measure discriminates against Eastern Shore oystermen and doubtless will fail to be ratified by the Maryland General Assembly at its next meeting. The Virginia bill discriminates against the Eastern Shore of Virginia as well as Maryland, because it practically eliminates scraping by sailboats, which form the bulk of the Eastern Shore oystering fleet. It is claimed that it is impossible to use a scrape as light as 40 pounds in a sailing craft. Only a motor boat can throttle down to the snail-pace necessary to keep such a light scrape on the river bottom. Furthermore, few Eastern Shore craft are less than 40 feet long.

Even the smallest sailing craft—the skipjack— is 40 feet or

more from stem to stern, and for Eastern Shoremen to scrape in the Potomac also means that they must have boats large enough to provide living quarters, since they cannot run into their home port after a day's work like Western Shore scrapers. It takes several hours of good sailing to cross the Chesapeake in the vicinity of Potomac, in order to reach Crisfield, Smith's Island and lower Dorchester, where these oystermen come from.

Mr. Earle suggested that if the Potomac must be opened to hand-scraping, sailing craft up to 55 feet be allowed. Vessels of such size would keep out the destructive larger boats and yet give the Eastern Shoremen a chance to share in the work. The Virginia measure naturally suits the Colonial Beach oystermen, who use only motor boats, but a bill of similar type introduced at the last session of the Maryland General Assembly failed of passage, and when the Virginia bill comes to Maryland for ratification it may meet the same fate. Therefore, the Potomac River remains unopened for an additional period.

JAPANESE OYSTERS SUFFER MORTALITY

ABOUT A MONTH AGO a dispatch from Tokyo caused considerable excitement among oyster growers of this country, especially those of the New England States. This dispatch stated that millions of Japanese oysters were dying, due to some undetermined disease. Fearing that this disease might be transmitted to American oysters, since not every state has placed an embargo on the importation of Japanese oysters, Mr. W. H. Raye, president of the Blue Point Company and one of the prominent members of the Oyster Growers and Dealers Association of North America wrote to the Commissioner of Fisheries at Washington, asking for information on the subject. Mr. Raye's request was followed up by a similar request from the Conservation Commissioner of Maryland, in which it was suggested that an embargo be placed on Japanese oysters until the cause of the disease could be determined. (Maryland already prohibits the importation of Japanese oysters for planting in our waters.)

The following letter was received from the Commissioner of Fisheries, under date of March 3, 1934.

Subject—JAPANESE OYSTERS

MR. SWEPSON EARLE, *Commissioner,*
Conservation Department,
516 Munsey Building, Baltimore, Md.

DEAR MR. EARLE:

With reference to our previous correspondence concerning the reported mortality of pearl oysters in Japan, you are advised that the following information has been received from our commercial attache at Tokyo.

"According to the official statement issued by the Japanese Ministry of Agriculture and Forestry, the mortality of pearl oysters in a limited area of Miye Perfecture was due to an unusually intensive propagation of a small organism belonging to the group of Dinoflagellates. This form is confined to warm waters of temperature about 62° F. in which it propagates so copiously sometimes that the water acquires a reddish tint and is called in Japan 'red current.' The organism is normally present in Japanese inland waters and has a wide range of distribution, occurring also along the Pacific Coast of the United States. It is a matter of record that its intensive development, causing 'red current,' occurs in Japan at more or less regular intervals of from eight to ten years, usually remaining about three weeks. The present occurrence is unusual because it began in November and is expected to continue through March. According to a statement made by Dr. C. E. McClung, professor of Zoology, University of Pennsylvania, who is at present teaching at the University of Tokyo, the organism causing 'red current' is always present in certain sea waters; it is not poisonous, but when occurring in enormous numbers smothers or suffocates the oysters.

"Consular records show that seed oysters shipped to the United States are produced almost exclusively in the northeastern part of Japan where the 'red current' is unknown. During the shipping season the temperature of the water in that section of the country drops to 37° F. The organisms causing 'red current' die instantly at low temperature and when taken out of the water."

In view of this information which was received from official sources the dangers of introducing into our waters the microorganism causing "red current" appears to be very remote.

Very truly yours,

CHAS. E. JACKSON, *Acting Commissioner.*

THE NUTRITIONAL REQUIREMENTS OF TROUT

By A. V. TUNISON,
Cortland Experimental Hatchery, Conservation Department of New York

NUTRITIONAL research in trout has been carried on at the Connecticut State Hatchery at Burlington and the Cortland Experimental Hatchery in New York for the past eight years by C. M. McCay and his coworkers for the purpose of determining the fundamental nutritional requirements of trout, including their needs for protein, fat, carbohydrates, minerals and vitamins; economical diets for rearing trout; and, facts concerning trout physiology. Some of these problems have been worked out and are, today, being put to use in some hatcheries. The need for scientific research in the field of fish nutrition is fast becoming apparent, and it will grow to be more so as more and larger fish are demanded for replenishing the present over-fished streams of the country.

It has been the practice to divide our experiments into two groups, the practical ones whose results can be put into operation at once and the fundamental ones whose results require an elapse of several years before they can be worked into practical usage, but which are undoubtedly the more valuable in the long run. A resume of the more important problems carried on at Cortland during the last two years will be given as briefly and concisely as possible.

From previous work it was shown that the meat in the hatchery diet of trout is the most expensive ingredient. A diet with this expensive ingredient making up the bulk of the food of the trout can be cheapened considerably by supplementing the meat diet with such common dry feeds as dried skimmilk, dried buttermilk, cottonseed meal, peanut meal, white fish meal, meat meal, salmon egg meal, and cereal by-products. This type of practical experiments has been continued at Cortland. During the first year it was found that dried skimmilk manufactured in four different ways still retained its nutritive value in each case. One of these skimmilks—manufactured by the spray process— was a very good binder of other dry feeds and meat. Skimmilk proved to be slightly superior to dried buttermilk. Dried buttermilk is, however, a very valuable dry food as was shown in one experiment where it was substituted for half of the sheep pluck diet and the fish fed this diet grew as well as the fish receiving the plucks alone.

The value of milk for growing animals has been known for a number of years and most livestock husbandrymen have become familiar with the term "milk fed animals." To recent date this has been an odd term in the trout culturist business. However, he now is realizing the importance of milk for his fish and will soon be producing "milk fed" trout. Dried milk is a very valuable dried food for trout feeding. It is high in protein, which is of good quality, and especially when combined with other dry foods and meat makes a very complete chemical diet. It is rich in calcium, whereas meat is low in this exceedingly valuable mineral. Since trout requires very little fat in their diet, as will be discussed later, the low fat content of dried skimmilk and buttermilk is beneficial to them. Another quality of dried milk is its absorbative nature which helps to check the loss of the valuable meat juices. Although some object to the cloudy condition produced in the water on feeding the dry feed meat diets, we have experienced no mortality in its usage. We have overcome this condition in the water to some extent by mixing the diet and letting it stand for about twelve hours before feeding. At the present time there is a firm developing a dried skimmilk which will not produce this waste in the water. One experiment here showed that it had nutritive value equal to that of our other skimmilks and did reduce the waste in the water appreciably.

Other cheap sources of protein, plant in this case, which are available in large quantities at the feed markets are cottonseed meal and peanut meal. These feeds when properly bound together with the meat supplement—using, in our case, spray process skimmilk—proved to have equal nutritive value for the rearing of trout fingerlings.

In a series of tests on different hatchery meats, sheep liver, sheep hearts and beef spleen were all of equal value as supplements to a dry feed mixture of half and half cottonseed meal and dried skimmilk. This indicates that when such feeds are used in the hatchery diets of trout the cheaper sources of meat supplements may be used economically.

For the study of the above dry feeds and hatchery meats twelve experiments were conducted, using standard hatching troughs and deep tanks as units with 400-500 brook trout on each experiment. The fish were weighed and counted at periodic intervals of four weeks. There was, practically speaking, no mortality on these twelve diets and it is believed that they can be used in almost any hatchery with good results. Three feeds combined in equal parts made up ten of the diets, one ingredient being the meat supplement and the other two were dry

feeds. One group of trout were fed sheep plucks alone and served as a control experiment. In one diet dried buttermilk was substituted for half of the plucks. The growth of all twelve groups of fish fed these diets was practically identical.

In order to continue the study of common dry feeds for trout, seven more large scale experiments were conducted the following year. The results from these experiments show that trout make as good growth, and at a considerable saving of money, when the meat supplement to the dry feed diet is reduced to a 15% level, the remaining part of the diet being made up of three dry feeds in equal parts by weight. The mortality was negligible in all cases. It was also found that cottonseed meal and white fish meal compared favorably with each other in nutritive value. Both were slightly inferior to salmon egg meal as far as the growth of the trout was concerned but they were, however, as economical in the food cost to produce a pound of trout flesh. Dried salmon egg meal compared favorably with dried skimmilk, both as regards to growth and the economy of the production of trout flesh.

In these seven experiments the trout fed the six dry feed meat diets made better growth than these receiving the beef liver alone, and in several instances the trout weighed twice as much at the end of the experimental period—32 weeks, all being the same weight at the beginning of the experiments.

The physical condition of dry feed meat diets depends upon the kinds of feeds used and the amount of water added in the preparation of the diets. The proper combination of dry feds and meat necessary for good physical properties is learned through experience. In the case of water, it has been found necessary to add about equal parts by weight of water and dry feed in order to obtain a good consistency in the diets. The amount of water to add also depends upon the kind of feeds used and experience will determine the amount. It also depends upon the size of fish and the conditions under which they are reared, e. g., ponds or troughs. For fish above two inches in length it will fall within a range of 80-100 pounds of water for every 100 pounds of dry feed used.

In a series of small scale experiments fish grew as well when the meat supplement to a dry feed diet was fed either daily, weekly or biweekly. In no case was there any mortality. It shows the possibility of economy in ice, or other refrigeration, labor in grinding meat, and in transportation costs of hauling meats. It would amount to quite a sum in many hatcheries. This method of supplying supplements to trout would prove very convenient for those localities where the highways are at times nearly impassable.

As a result of these practical experiments it becomes more and more apparent that the hatcherymen must soon adopt dry feed meat diets in place of the all-meat feed if they are to rear trout economically.

The great advantage in animal husbandry today has been brought about by carefully designed fundamental experiments. Only until recently has a marked advance been made in the fundamental nutrition studies of trout. These have been useful and will continue to be more so as time goes on. Many problems face the student of trout nutrition. Due to the nature of the animal it is difficult to develop a technique for carrying on many fundamental nutrition problems, but slowly, and with painstaking care and patience, these difficulties will be overcome. Then the student can carry on his bio-chemical studies and rapid progress will be made.

When one considers the fact that trout are cold blooded animals and that the fat in their diets, either the hatchery diet or the natural one, are generally of high melting point, that is, solid at room temperature, it leads to doubtfulness as to whether or not they can utilize this fat for growing purposes. In the case of man, such fats as butter and lard are melted by his body heat and are nearly all utilized, while the fats melting above his body temperature such as mutton tallow and tristearin are only partially absorbed and are excreted as undigested food waste. If fish do not utilize fat it serves only as bulk in their digestive tract. If absent it would not overburden them, and would allow more space for utilizable protein and carbohydrates. In order to determine if trout were able to digest either high or low melting point fats, three experiments were run. In one case, a dry feed-meat diet was fed to which was added Wesson Oil, a low melting point fat, liquid at our water temperature of 47° F. To the same dry feed-meat diet, in another case, was added Crisco, a high melting point fat. The third group received the dry feed-meat diet, restricted in amount to offset the percentage of fat in the other two diets, and served as a control. The growth of the three groups of trout fed these diets was parallel. This indicated that trout do not utilize such high or low melting point fats as Crisco and Wesson Oil. Although this is quite a step forward in the question of the fat digestion by trout a chemical balance must be run in order to get conclusive evidence.

Another problem that puzzled the nutrition student was, since the usual hatchery meat diet is low in calcium, how are trout able to build strong bone structures. This was determined this year. It was found that trout, in our water supply,

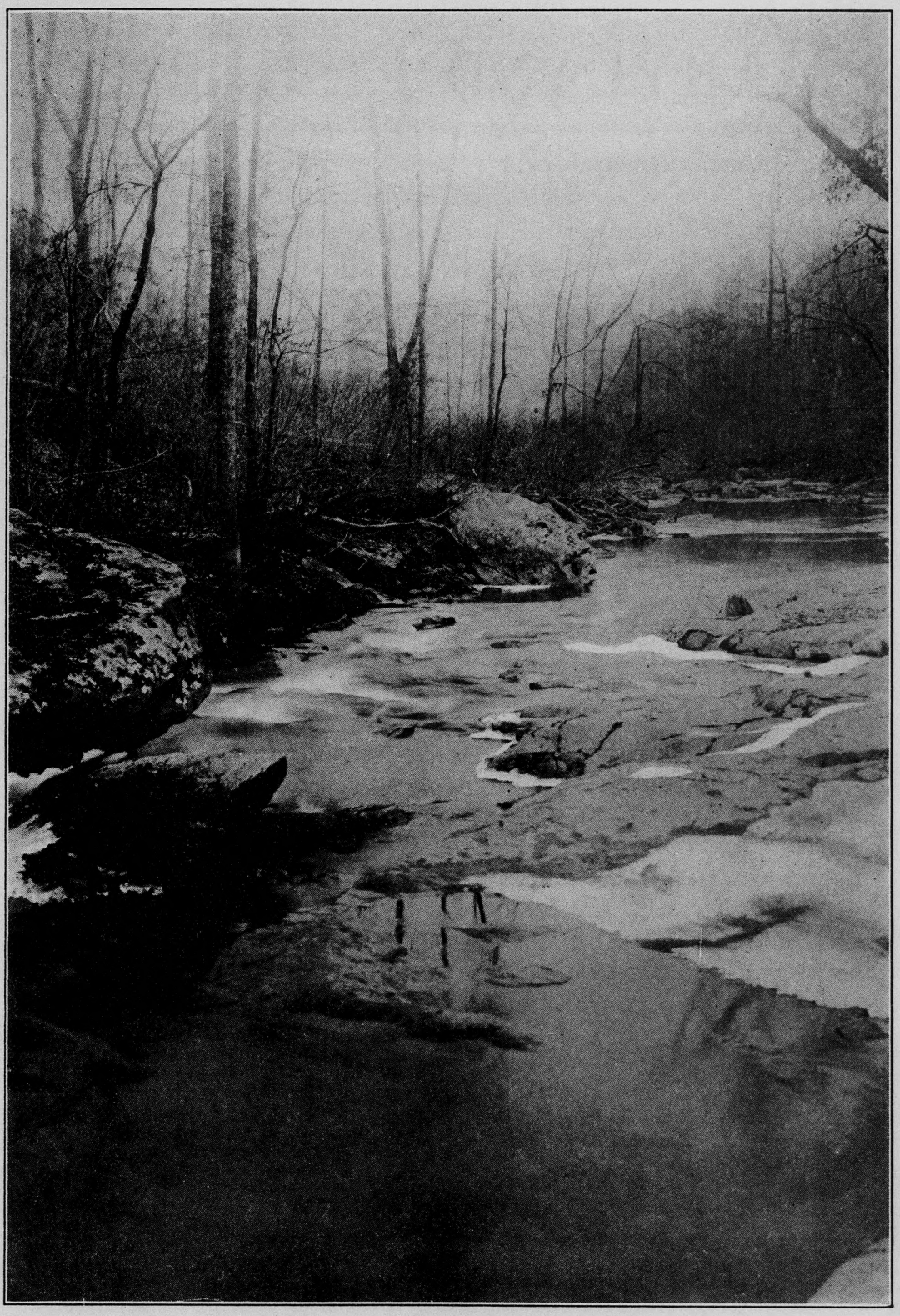
obtain about 80% of their calcium needs from the water in which they are reared, the remaining 20% being furnished in their food. We now wish to determine the calcium content of trout reared in high and low calcium water. It will be interesting since many streams are low in this mineral.

In nature fish seek the water to which they are best adapted. Many streams, due to their temperature, are not suited to certain species and for the same reason, neither are many hatcheries. The suitability of water having a temperature of $47 + 0.5°$ F. was determined for four species of trout—brook, brown, rainbow, and lake. The four species were reared under the same environmental conditions and were fed the same diet. The lake trout were the most economical species to rear and the browns the most expensive, the brooks and rainbows falling in between the two. This shows that in many hatcheries only one or a few species should be reared if economy in production influences the management of the hatchery. However, in large states, where applications are received for various species from all districts, it would be necessary to calculate transportation costs from one hatchery to another to see if it would be economical in the long run to rear one or more species in the hatchery in question. It would, of course, be necessary to know the production of the various species in the various hatcheries of the state.

To summarize these experiments, we have stressed the importance of dry feeds in trout feeding, showing that they are the more economical and will produce better fish. They can be stored for long periods of time since they are not of a perishable nature. The dry feeds used and recommended are the more common ones on the market and are available in quantities.

We feel that the fundamental experiments are necessary for the advancement of trout culture and, although slow to carry on and rather expensive, are the more important over a period of years. This year we have carried on experiments which indicate that trout do not utilize fat to any marked degree. Also, it was determined that in a certain water supply trout obtained 80% of the calcium needs of their bodies from the water, the remaining needs being supplied in the food.

This experimental project is being conducted through the cooperation of the New York State Conservation Department, The United States Bureau of Fisheries and Cornell University.



SNOWDEN CREEK, NORTH BRANCH PATAPSCO RIVER—
A GOOD BROWN TROUT STREAM

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MARYLAND FISHERIES

PUBLISHED BIMONTHLY BY CONSERVATION DEPARTMENT,
SWEPSON EARLE, Commissioner.

No. 27 BALTIMORE, MARYLAND March, 1934

MARYLAND'S THREE HUNDREDTH BIRTHDAY

IN THIS ISSUE we digress from our usual consideration of the marine life of our State to mention briefly an event of great importance to all Marylanders which occurred three hundred years ago this month.

Early in March, 1634, two little ships, the "Ark" and the "Dove," after a long and arduous voyage from their homeland, entered the broad waters of the Potomac and at last reached the objective of their weary four months' journey. On March 25th they formally landed on what is now Blackistone Island, but which they called St. Clement's Island. In his diary of the journey Father White, who came with the colonists of Leonard Calvert, described the scene which took place on that fair March day of long ago. A fine grove of oaks stood on the island, which was not thickly wooded and tangled with undergrowth, but gave the appearance of having been planted by the hand of man. A large cross was hewed from a tree by the settlers and then and there was celebrated the first Mass in the Maryland Colony, and almost the first Mass in the New World.

These early settlers found this region a land of beauty and abundance. The rivers teemed with fish life, the forests with game. The climate was temperate and the land fertile. Even the Indians were friendly, and the colony, which began at St. Mary's City on the St. Mary's River, prospered. Looking back over three hundred years of her history, Maryland may well be proud of the part she has played in the life of our great country. Small in area though she be, Maryland has produced from the beginning men of the very first importance, men whose names will always be mentioned with pride in the annals of the nation.

The celebration which will mark this Tercentenary year are many and interesting. The first takes place at Blackistone Island on March 25th, when a forty-foot cross to commemorate the first spot will be dedicated. The second celebration takes place on June 15 and 16, at St. Mary's City, when elaborate water and land pageants will reenact scenes out of Maryland's rich historical past. Other celebrations are planned at Baltimore and elsewhere during the coming summer. Doubtless thousands of visitors will be attracted to Maryland to witness these events. They will see water courses and a countryside as fair as those which met the eyes of the first colonists; they will see fine old homes many of which antedate the Revolution, and they will meet many Marylanders who still dispense this hospitality for which this region has long been famous.

REVIEWING THE OYSTER SEASON

MARCH FIFTEENTH ended the oyster dredging season in all waters of the State except Tangier Sound, where scraping operations are continued until the first of April. Reviewing the past season it cannot be said that it was a successful one for the dredgers. After the first of the year it looked as though business would pick up, due to an early Lenten season, when the demand for sea food is always very great. However, the unusual ice conditions which visited the Chesapeake Bay region caused all boats to be tied up in their harbors during the month of February, and oystering was practically at a standstill.

The Conservation Commissioner received some requests to extend the dredging season until April first. This, however, was not within his power to do, as all seasons for taking sea food are fixed by law and not capable of reduction or extension. It is believed that oysters on the dredging rocks south of Sandy Point will be in far better condition next fall, by reason of the additional rest this winter, and small oysters will be given a chance to mature, and, in addition, the market will be far better than we could expect from now until the close of the season in Maryland on April 15.

The Conservation Commissioner, after a survey of all the oyster bars made last fall, found that about half a million bushels of seed oysters could be removed from the bay to other oyster bars to the benefit of both the seed oysters and

the bars, but the work would require the expenditure of monies not at the moment available from the Department's funds. Accordingly, the Commissioner applied to the Public Works Administration of the government for a loan, to be paid back from a special tax to be imposed on the oysters when taken up. The officials of this agency, however, did not act favorably on the request. About a month ago, the Commissioner again endeavored to get the Civil Works Administration to put this project through, but also without success.

Having exhausted the possibilities of government aid for this very meritorious work, the Department, out of its own budget for shell planting operations this spring, will set aside a fund for the removal of a certain quantity of seed oysters from the head of the bay to other suitable growing bottoms in the State. By this means the dredgers will be given a couple of weeks' work after the first of April, which will compensate them in small measure for their losses during the past season, and at the same time benefit the oyster bars.

At this time the Department is making a careful investigation of the areas where the oysters are too thick, having in mind a plan to spread them on other bars where they may make better growth during the coming spring and summer. This was done very successfully in Pocomoke Sound, as well as the St. George's River a year ago.

SIZE LIMITS

By TALBOTT DENMEAD,
Law Enforcement Office, U. S. Bureau of Fisheries

There is much difference of opinion relative to the subject of whether fish caught on hook and line and returned to the water will survive. The answer is not easy, but is important, for some states base their laws on daily limits on the theory that few fish, so captured and returned, will live; whether they do or do not recover depends upon several things. As the opening of the trout season in Maryland is at hand (April 1st) this subject is a timely one.

Generally speaking the theory that a majority of the fish, hooked and returned to the water, die cannot be supported by the evidence. It is true that many fish returned to the water do eventually succumb, but that is generally because of im-

proper handling. Of course, a brook trout that is caught on a small barbed hook baited with a worm, and the hook has penetrated deeply enough to draw blood, is doomed. So also is the trout that is not deeply hooked but is lifted out of the water and roughly handled with dry hands and *thrown* back into the stream.

But the destruction of the small fish hooked in a large percentage of cases is not necessary, and can and should be prevented. If one fishes for trout with bait, which he has a perfect right to do without criticism from his more scientific brother, the fly fisherman, he can easily prevent destruction of many undersized trout by the use of a large hook and a large bait. By such means many a small trout is lifted entirely out of the water without hooking at all and dropped safely back into the water unharmed. Incidentally the larger bait is more attractive to the bigger fish and produces better results.

Naturally the Fish Commisioner who receives reports of dozens of small dead trout lining the banks at the end of the first day of the open season is distressed and attempts by law to remedy the evil. Maryland has tried to meet this condition by providing a daily limit of ten trout, all fish taken to be counted, but all under 7 inches must be returned to the water. The answer seems to be: Educate the fishing public to artificial fly fishing, the use of larger hooks and larger baits, and to carefully handle small fish when returning them to the water.

It cannot be disputed that trout taken on a barbed fly are less likely to serious injury and can be returned to the water with a better chance of survival than those captured with bait: there is no liklihood of the fish gorging the artificial fly, but this is almost certain to occur frequently in bait fishing with small hooks.

That many trout will live if captured on barbed hooks if properly handled and returned to the water cannot be contradicted; tests have been made, the results of which have supplied undisputed evidence of this fact. One series of such experiments was conducted by certain state officials on rearing ponds and the results are most interesting and instructive; only 2½% died of those taken on artificial flies, and gently returned to the water with wet hands, or unhooked without removal from the water. Only 10% died of those taken with the ordinary barbed hooks with bait and returned to the water in a similar manner. This information was furnished by the American Game Association.

Of course every angler has caught trout with mouth wounds thoroughly healed over; fish in good condition have been taken with a pie shaped portion of the lower jaw torn out, as if the hook had been jerked loose, yet the wound had entirely healed over and the fish were in good condition. But the fish that can and does occasionally survive such rough treatment is the exception.

Dr. Carl Hubbs, Director of the Institute for Fisheries Research, Michigan, is quoted as saying recently that in an investigation or "inquest" he made of a number of dead trout on a Michigan stream, 17% of those examined died as a result of injuries received by being caught on fish hooks, and that it was apparent from the mutilation of some that they were flipped off the hook by lazy fishermen without resorting to the use of hands, or that the hook had been otherwise forcibly jerked out; the fish examined were all just under the legal limit. Care in handling would have saved many of these fish.

The necessity and reason for careful handling with wet hands or releasing the fish while reposing in the landing net or running one's hand down the leader and releasing the fish from the fly with a flick of the finger without touching it, or lifting it from the water, is known to most every angler. This prevents the abrasion of the slimy film which coats and protects the fish from dirt and disease germs. When this film is broken the fish is likely to develop a fungus and die sometime later; death will not result from hooking in the horny parts of the mouth, but from the improper and unnecessary rough handling.

Fish can stand serious injury and fully recover: in a fight between a northern pike and a pickerel in one of the Bureau of Fisheries aquaria about 6 months ago, the pickerel came off a poor second with several long deep gashes in both sides and a mutilated tail: the wounds have entirely healed and the pickerel is in perfect condition and growing rapidly.

In the provinces of Alberta and Saskatchewan and the Northwest Territories the law requires the angler to be equipped with a disgorger, and undersized fish must not be lifted from the water but removed from the hook with wet hands, preferably with hand covered with wet cotton or woolen gloves. Not a bad law. We can learn a lot from our northern neighbors. The New York Times recently published the following:

"The Connecticut Board of Fisheries and Game has been investigating the destruction of small trout in the streams of that

state. Unfortunately some of the cases checked have been found to be those in which anglers after *tearing* the hooks from the mouths of the fish, threw them back into the waters with resulting damage to the trout. Whether an angler is careful in removing the hook from the fish to prevent infection, or whether he is sure to handle fish only with wet hands, is a matter which depends chiefly upon his sportsmanship.

Again, Mr. Arthur L. Clark, superintendent of fisheries, of Connecticut, states that two fishermen sure of taking their daily limit were observed to catch many trout over the size limit, tear the hooks from the fishes' mouths and throw them back into the river, even tossing them up into the air from the bridge from which they were fishing, retaining only fish that measured over nine inches. Of course, most of them thrown back perished.

The U. S. Bureau of Fisheries needed some smallmouth black bass for breeding purposes at its West Virginia hatchery in the summer of 1933, and the only way they could obtain them was by angling. Employees of the Bureau used tandem spinners with treble hooks and caught 288 smallmouths which were transported long distances via buckets, tubs and autos to the hatchery with a loss of only four fish.

It seems a program of education as to how to properly handle and release undersized fish would certainly be worth while and improve our fishing

WORCESTER COUNTY OYSTER BOTTOMS OPEN FOR LEASING

THE CONSERVATION DEPARTMENT will receive on April 2, applications for the leasing of the newly opened oyster bottoms of Chincoteague, Sinepuxent and Isle of Wight Bays, all of which are located in Worcester County. The opening of the inlet below Ocean City, through which the salty waters of the ocean pour into these inland bays, has made available for oyster culture these additional areas.

The bottoms have been mapped out in 10-acre lots by the Department's engineer, and applications from Worcester County residents will be accepted. In accordance with the State's oyster culture law, such applications must be advertised for four weeks in a newspaper of the county in which

the desired bottom is located, and after the expiration of another thirty-day period after the last advertisement, which is allowed for the filing of protests, leases may be granted.

As a number of oystermen have for years planted in these bays, particulary the lower Chincoteague, under "squatters' rights," the Department will give such persons first preference in the matter of leases.

The Department looks forward to considerable planting activity in the bays of Worcester County during the coming summer. Lower Chincoteague is already suitable for oyster planting, and the other bays will rapidly become so through the introduction of salt water from the new inlet. It is felt that Maryland's seaside will soon be the seat of a thriving sea food industry, and certainly the special tang which the ocean lends to the oysters, clams, etc., which come from that region will create a brisk demand for the Worcester County products.

STATE STOCKS TROUT STREAMS

In anticipation of the trout season which opens on April 1st, the superintendent of State Hatcheries, A. M. Powell, has placed 34,150 trout of legal size and over, into the trout streams of Anne Arundel, Baltimore, Frederick, Garrett, Harford and Washington Counties. In addition to this number already in the streams, Mr. Powell is holding 10,000 additional trout for replenishing the streams during the season as they become depleted. This will assure the anglers of good sport during the coming months.

GOVERNMENTAL AID FOR WATERMEN SOUGHT

AT THIS TIME there are pending before Congress three bills of considerable importance to the Conservation Department and the watermen of Maryland. These bills were introduced by Honorable S. O. Bland of Virginia, Chairman of the House Committee on Merchant Marine, Radio and Fisheries. These bills are known as H. R. 7147, 7148 and 7149.

Since the storm of last August which did so much damage in the Chesapeake Bay and other sections of the Atlantic

Coast, the watermen, engaged in fisheries, have never recovered from the loss of their boats, nets and equipment, as well as the oyster and crab houses which were badly wrecked.

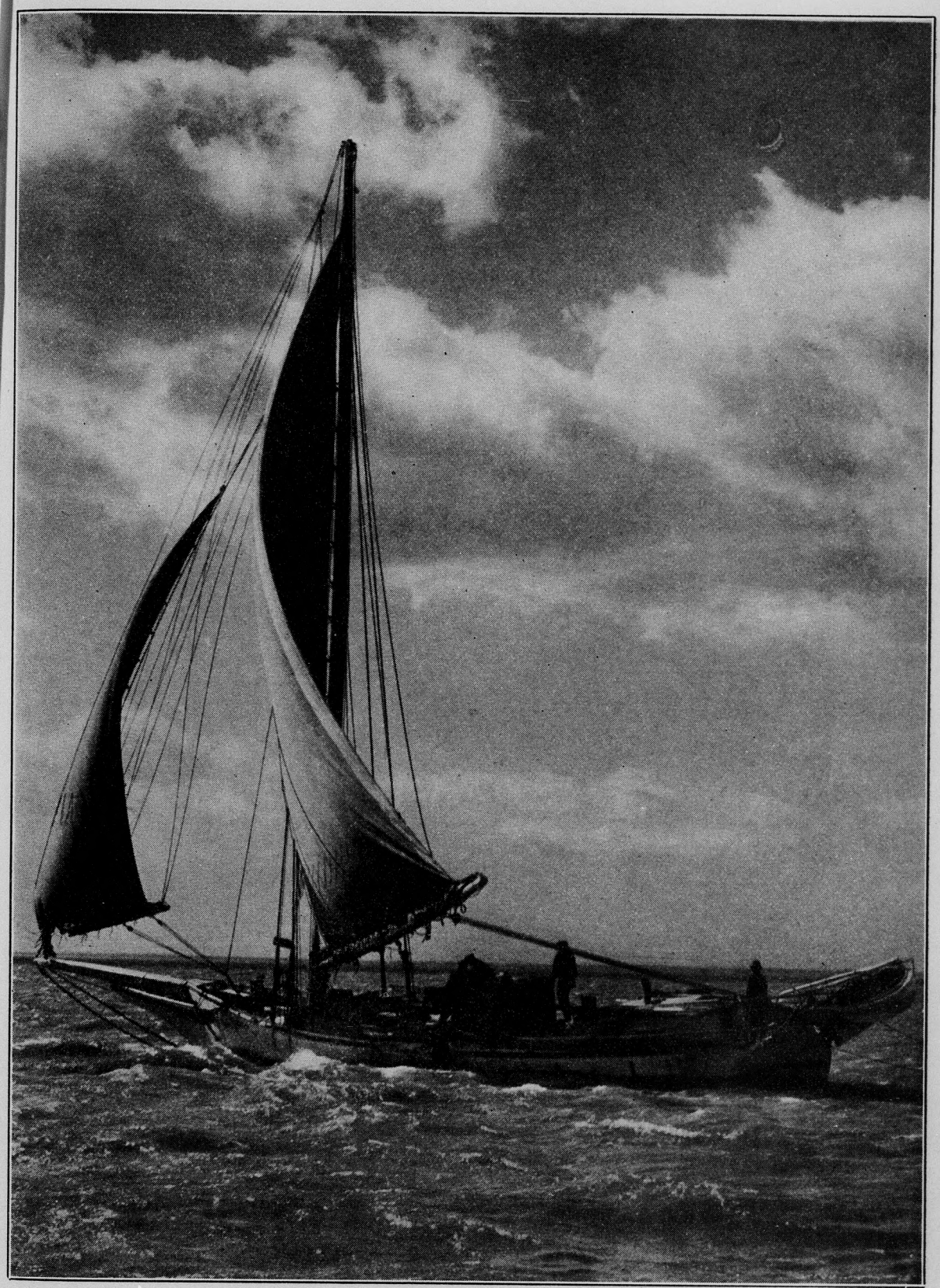
In Representative Bland's bill 7149, it is provided that an appropriation of $2,000,000 be made from the Treasury, or as much thereof as may be necessary for the purpose of making loans to persons, firms, partnerships, associations or corporations engaged in the various branches of the sea food industry for the purpose of repairing, rebuilding and replacing boats, nets, poles, twine, wharves, plants and other equipment damaged by the hurricane, cyclone, tidal waves or floods in the year 1933, the said loss to include capital to resume fishing operations. It is further provided in this bill that the money therein authorized to be appropriated shall be immediately available, and the loans made shall be paid in such installments for such period and at such a rate of interest as the Secretary of Commerce shall prescribe."

H. R. 7147 provides for extension to the sea food industry of all benefits, privileges, aids, loans or other advantages provided in laws enacted by Congress for the relief of persons engaged in the agricultural industry.

The third bill, known as H. R. 7148, authorizes the appropriation of $1,000,000 or so much thereof as may be necessary, to be expended under the direction of the Secretary of Commerce in restoring depleted oyster bottoms in the oyster-producing states of the United States, the monies so appropriated to be allocated equitably among the oyster-producing states in such manner as the Secretary of Commerce of the United States may determine. "All areas on which the monies herein appropriated shall be expended shall, during the period of such expenditure and for three years thereafter, be under the joint control of the Commissioner of Fisheries of the United States and the commissioner of the state wherein the expenditure is made, and no oysters or other shellfish shall be removed from said areas except in accordance with regulations approved by the Commissioner of Fisheries of the United States."

At the committee hearing held in Washington on February 27, Swepson Earle, Conservation Commissioner of Maryland, was present and spoke for these bills in order that the watermen of Maryland may receive necessary aid in replacing their boats, etc., damaged by the storm of last summer. It was fortunate that following this storm last year, at the direction of Governor Ritchie, Mr. Earle made a careful survey of the

loss of property sustained by the watermen on Smith, Deal, Hooper, Tilghman and Solomon's Islands as well as other important sea food centers of the State, and this information, carefully tabulated, was left with the committee. Every effort will be made on the part of Maryland to secure the passage of these bills, which will be of such material assistance to our citizens.



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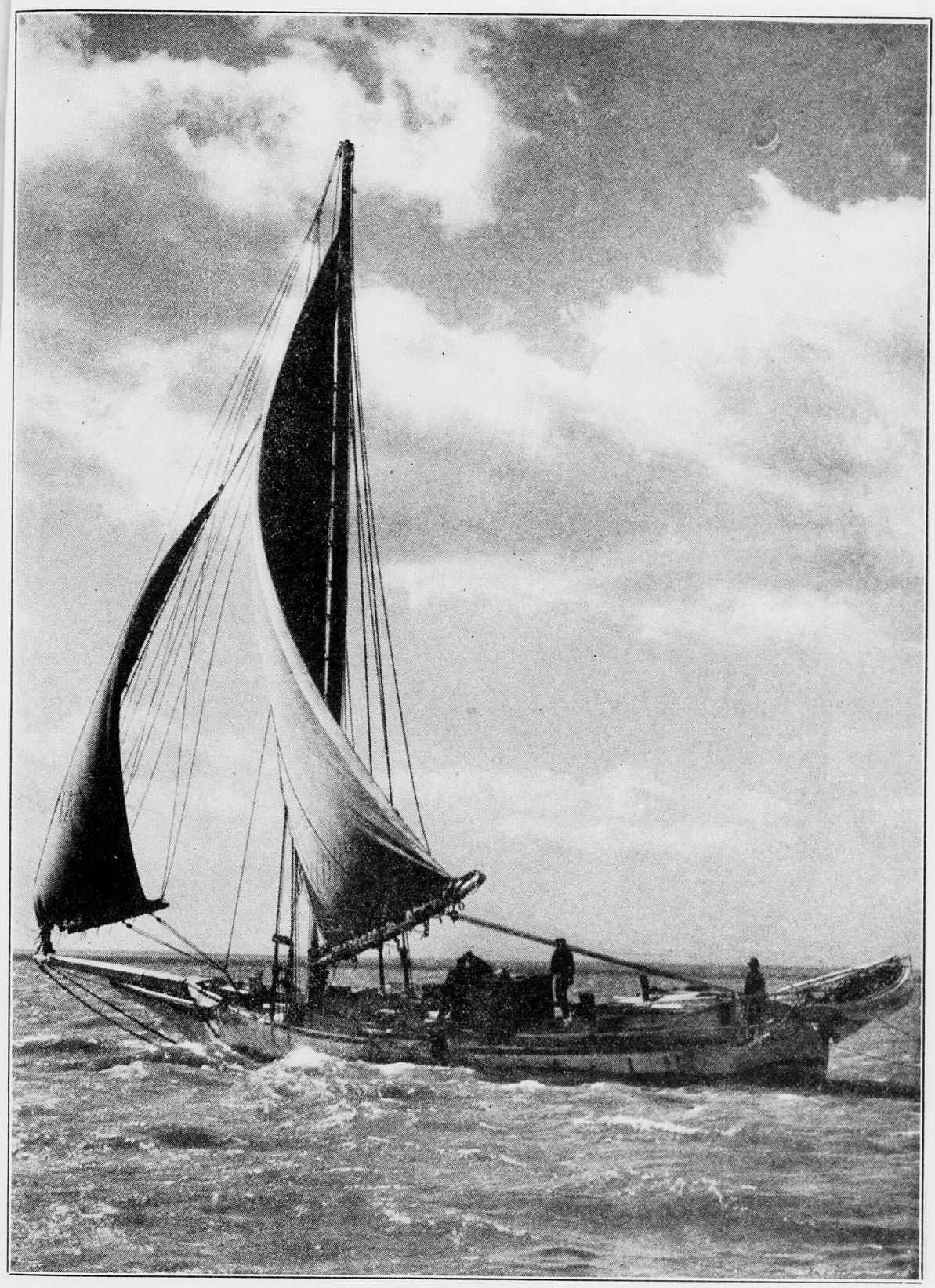

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